



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,732	09/04/2003	Homer M. Manning	2003-0576.00/US	4772
21567	7590	05/04/2005	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			GHYKA, ALEXANDER G	
			ART UNIT	PAPER NUMBER
			2812	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No. 10/656,732	Applicant(s) MANNING	
	Examiner Alexander G. Ghyka	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

ALEXANDER GHYKA
PRIMARY EXAMINER

Av 2812
Alex Ghyka

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' Own Admission in view of Sandhu et al (US 6,303,956).

The present claims generally require a method for forming a semiconductor device comprising forming a plurality of container capacitor bottom plates within a base dielectric layer; forming a supporting collar around each of the capacitor bottom plates, the supporting collar having a plurality of openings therein which expose the base dielectric layer; and etching the base dielectric layer through the openings in the collar to expose sidewalls of the plurality of container capacitor bottom plates, wherein subsequent to etching the base dielectric layer the supporting collar supports each of the plurality of container capacitor bottom plates.

According to Applicants' own admission in the present Specification, a blanket conductive layer 40 such as polysilicon is formed conformal with the deposited oxide layer, and will provide a capacitor storage node for the completed capacitor. A third blanket filler material 42, such as photoresist is formed to fill the containers provided by polysilicon, and then planarized to result in the Fig. 5 structure. Next the BPSG 32 is

Art Unit: 2812

partially etched with an etch selective to polysilicon to result in the structure of Figure 6. At this point in the process the polysilicon storage nodes (capacitor bottom plates) are only minimally supported, and as can be seen in Figure 6, the oxide 32 which supports the capacitor bottom plate is then removed. See Figures 4-7 and pages 2-3 of the present Specification.

Therefore, the Applicants' own admission differs from the presently claimed invention in that the supporting collar supports are not disclosed.

Sandhu et al disclose container structure for use in capacitors to reduce the risk of container to container shorting by insulating against bridging of conductive debris across the tops of adjacent container structures. Sandhu et al disclose the container is made out of an insulating material such as silicon dioxide. See column 2, lines 20-40, column 8, line 50 to column 9, line 20 and Figures 5-9.

It would have been obvious for one of ordinary skill in the art, at the time of the invention, to use the container structures as disclosed by Sandhu, in the capacitors as discussed in Applicants' own admission, for their known benefit in preventing shorting as disclosed by Sandhu. The container structure of the Sandhu reference combined with Applicants' own admission reads upon the presently claimed collar supports. Even though the supporting benefit is not specifically disclosed, the use of the container structures for their known benefit (insulation) would be obvious to one of ordinary skill in the art, and establish a *prima facie* case of obviousness over Claims 1-5 of the presently claimed invention.

Allowable Subject Matter

Claims 6- 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander G. Ghyka whose telephone number is (571) 272-1669. The examiner can normally be reached on Monday through Thursday during general business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached at (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

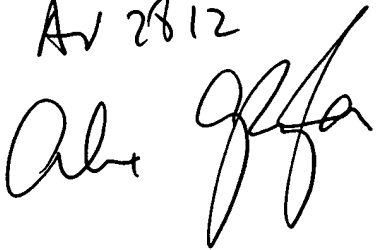
Application/Control Number: 10/656,732
Art Unit: 2812

Page 5

AGG
April 28, 2005

ALEXANDER GHYKA
PRIMARY EXAMINER

Av 2812

A handwritten signature in cursive script, appearing to read "Alex Ghyska", written in black ink.